

## ABSTRACT

A novel resonator structure is disclosed which pertains to laser resonator geometries possessing circular symmetry, such as in the case of disk or spherical lasers.

- 10 The disclosed invention utilizes multi-layer dielectric (MLD) thin film reflectors of unusually high-finesse. These filters are disposed in such a way as to allow selection of low order modes and suppression of parasitic modes while allowing an extremely high cavity Q factor for the modes selected. The invention disclosed, in its preferred embodiments, is seen as particularly useful in applications requiring high efficiency in
- 15 the production and coupling of coherent radiation. The invention is also well suited for achieving mode selection and narrow line-widths. This is accomplished in a cavity design that is relatively compact and economical.